

Review of 2030 Scenarios

California Water Plan Update Process

Presentation Topics

- ◆ What are scenarios?
- ◆ Why are we using scenarios?
- ◆ Three scenarios for CWPU 2004
- ◆ Application of scenarios in CWPU process

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What are scenarios?

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What are scenarios?

- ◆ Multiple versions of plausible future conditions
(varied by key water demand drivers)
- ◆ Represent different possible water demand levels in
the year 2030
- ◆ Each scenario is defined by one level of supply-
related water management conditions
(i.e. supply drivers)

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Scenarios are NOT:

- ◆ Intended to identify the most probable future
- ◆ Preferred visions crafted by interest groups with the intent of working toward that future

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Why are we using scenarios?

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Why are we using scenarios?

- ◆ Help address the wide range of future uncertainties
- ◆ Help decision makers better assess risks and trade-offs associated with resource management strategies by examining their efficacy under various future conditions (i.e. "durability" of resource management strategies)

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Three Scenarios for Update 2004

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Three Scenarios for Update 2004

- ◆ **Scenario 1 - Current trends:** Continue based on current trends with no big surprises
- ◆ **Scenario 2 - Resource sustainability:** California is more efficient in 2030 water use than today while still growing its economy and restoring its environment
- ◆ **Scenario 3 - Resource intensive:** California is highly productive, respectful of the environment, yet less efficient in 2030 water use than in Scenarios 1 or 2.

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*Factor ranges
are varied*

*Factor ranges
are not varied*

FACTOR 1	SCENARIO 1 CURRENT TRENDS	SCENARIO 2 RESOURCE SUSTAINABILITY	SCENARIO 3 RESOURCE INTENSIVE
Total Population	DOF	DOF	Higher than DOF
Population Density	DOF	Higher than DOF	Lower than DOF
Population Distribution	DOF	DOF	Higher than DOF
Total Commercial Activity	Current Trends	Increases in Trend	Increases in Trend
Commercial Activity Mix	Current Trends	Increases in High Water Using Activities	Increases in High Water Using Activities
Total Industrial Activity	Current Trends	Increases in Trend	Increases in Trend
Industrial Activity Mix	Current Trends	Decreases in High Water Using Activities	Decreases in High Water Using Industries
Total Crop Area (Includes Multiple Cropping)	Current Trends	Level Out at Current Crop Area	Level Out at Current Crop Area
Crop Unit Water Use	Current Trends	Decreases in Crop Unit Water Use	Increases in Crop Unit Water Use
Environmental Water-Flow Based	Current Trends	High Environmental Protection	High Environmental Protection
Environmentally Sensitive Land Based	Current Trends	High Environmental Protection	High Environmental Protection
Naturally Occurring Conservation	Current Trends	High Environmental Protection	High Environmental Protection
Urban Water Use Efficiency	Current Trends	Current Trends	Current Trends
Per Capita Income	Current Trends	Current Trends	Current Trends
Seasonal/Permanent Crop Mix	Current Trends	Current Trends	Current Trends
Irrigated Land Reclamation	Current Trends	Current Trends	Current Trends
Hydrology	Current Trends	Current Trends	Current Trends
Climate Change	Current Trends	Current Trends	Current Trends
Colorado River Supply	Current Trends	Current Trends	Current Trends
Existing Inter-Regional Import Projects	Current Trends	Current Trends	Current Trends
Flood Management	Current Trends	Current Trends	Current Trends
Energy Costs	Current Trends	Current Trends	Current Trends
Ambient Water Quality	Current Trends	Current Trends	Current Trends
Groundwater Recharge	Current Trends	Current Trends	Current Trends
Ag Discharge Requirements	Current Trends	Current Trends	Current Trends
Urban Runoff Mgmt.	Current Trends	Current Trends	Current Trends
Recreation	Current Trends	Current Trends	Current Trends
Recycled Water	Current Trends	Current Trends	Current Trends
Water Transfers Within Regions	Current Trends	Current Trends	Current Trends
Water Transfers Between Regions	Current Trends	Current Trends	Current Trends
Integrated Ground & Surface Water Mgmt.	Current Trends	Current Trends	Current Trends
Groundwater Storage	Current Trends	Current Trends	Current Trends
Surface Water Storage	Current Trends	Current Trends	Current Trends
Conveyance Facilities	Current Trends	Current Trends	Current Trends
Rate Structure	Current Trends	Current Trends	Current Trends
Cost Recovery	Current Trends	Current Trends	Current Trends

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FACTORS AFFECTING REGIONAL AND STATEWIDE WATER USE AND SUPPLIES 3 POSSIBLE FUTURE SCENARIOS FOR 2030			
FACTOR ¹	SCENARIO 1	SCENARIO 2	SCENARIO 3
	CURRENT TRENDS	RESOURCE SUSTAINABILITY	RESOURCE INTENSIVE
Total Population	DGP	DGP	Higher than DGP
Population Density	DGP	Higher than DGP	Lower than DGP
Population Distribution	DGP	DGP	Higher West & Southern Lower Central & Northern
Total Commercial Activity	Current Trend	Increase in Trend	Increase in Trend (Same as Scenario 2)
Commercial Activity Mix	Current Trend	Increase in High Water Using Activities	Increase in High Water Using Activities
Total Industrial Activity	Current Trend	Increase in Trend	Increase in Trend (Same as Scenario 2)
Industrial Activity Mix	Current Trend	Increase in High Water Using Activities	Increase in High Water Using Industries
Total Crop Area (Includes Multiple Cropping)	Current Trend	Level Out at Current Crop Area	Level Out at Current Crop Area
Crop Unit Water Use	Current Trend	Decrease in Crop Unit Water Use	Increase in Crop Unit Water Use
Environmental Water-Flow Based	Current Trend	High Environmental Protection	High Environmental Protection
Environmental Water-Land Based	Current Trend	High Environmental Protection	High Environmental Protection
Naturally Occurring Conservation ²	NOC Trend in MOUs	Higher than NOC Trend in MOUs	Lower than NOC Trend in MOUs
Urban Water Use Efficiency	All Cost Effective BMP's in Existing MOU's Implemented by Current Signatories (present commitments)		
Ag Water Use Efficiency	All Cost Effective EYMP's in Existing MOU's Implemented by Current Signatories (present commitments)		
Per Capita Income	Current Trends	Current Trends	Current Trends
Seasonal/Permanent Crop Mix	Current Trends	Current Trends	Current Trends
Irrigated Land Retirement	Currently Planned	Currently Planned	Currently Planned
Hydrology	Essentially a Repeat of History	Essentially a Repeat of History	Essentially a Repeat of History
Climate Change	Essentially a Repeat of History	Essentially a Repeat of History	Essentially a Repeat of History
Colorado River Supply	Equal to 4.4 Plan	Equal to 4.4 Plan	Equal to 4.4 Plan
Existing Inter-Regional Import Projects	Current Conditions	Current Conditions	Current Conditions
Flood Management	Current capacities, management practices and operations	Current capacities, management practices and operations	Current capacities, management practices and operations
Energy Costs	As Projected From Current Trends	As Projected From Current Trends	As Projected From Current Trends
Ambient Water Quality	Current Conditions	Current Conditions	Current Conditions
Drinking Water Standards	Current and Planned	Current and Planned	Current and Planned
Ag Discharge Requirements	Current and Planned	Current and Planned	Current and Planned
Urban Purification	Future Level of Use	Future Level of Use	Future Level of Use
Recreation	Present Demand Trends Continued	Present Demand Trends Continued	Present Demand Trends Continued
Decadling	Current Level + Permitted/Forecast	Current Level + Permitted/Forecast	Current Level + Permitted/Forecast
Regional Water	Current Level + Permitted/Forecast	Current Level + Permitted/Forecast	Current Level + Permitted/Forecast
Water Transfers	Currently Approved Transfers	Currently Approved Transfers	Currently Approved Transfers
Water Transfers	Currently Approved Transfers	Currently Approved Transfers	Currently Approved Transfers
Water Transfers	Currently Approved Transfers	Currently Approved Transfers	Currently Approved Transfers
Between Regions	Current Level + Permitted/Forecast	Current Level + Permitted/Forecast	Current Level + Permitted/Forecast
Irrigated Ground & Surface Water Right	Current Level + Permitted/Forecast	Current Level + Permitted/Forecast	Current Level + Permitted/Forecast
Groundwater Storage	Current Level + Permitted/Forecast	Current Level + Permitted/Forecast	Current Level + Permitted/Forecast
Surface Water Storage	Current Level + Permitted/Forecast	Current Level + Permitted/Forecast	Current Level + Permitted/Forecast
Conveyance Facilities	Current Level + Permitted/Forecast	Current Level + Permitted/Forecast	Current Level + Permitted/Forecast
Rate Structure	Current Practices	Current Practices	Current Practices
Cost Recovery	Current Practices	Current Practices	Current Practices

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Water Transfers	Currently Approved Transfers	Currently Approved Transfers	Currently Approved Transfers
Water Transfers	Currently Approved Transfers	Currently Approved Transfers	Currently Approved Transfers
Between Regions	Current Level + Permitted/Forecast	Current Level + Permitted/Forecast	Current Level + Permitted/Forecast
Irrigated Ground & Surface Water Right	Current Level + Permitted/Forecast	Current Level + Permitted/Forecast	Current Level + Permitted/Forecast
Groundwater Storage	Current Level + Permitted/Forecast	Current Level + Permitted/Forecast	Current Level + Permitted/Forecast
Surface Water Storage	Current Level + Permitted/Forecast	Current Level + Permitted/Forecast	Current Level + Permitted/Forecast
Conveyance Facilities	Current Level + Permitted/Forecast	Current Level + Permitted/Forecast	Current Level + Permitted/Forecast
Rate Structure	Current Practices	Current Practices	Current Practices
Cost Recovery	Current Practices	Current Practices	Current Practices

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Application of scenarios in the CWPU process

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Application of scenarios in WPU process

3 Key Components

- 1 - Develop and apply analytical procedures, tools and data (including quantification of the scenarios)
- 2 – Develop accompanying resource management response packages (Update 2008)
- 3 – Formulate study permutations based

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